

## **Remarks**

### **I. Introduction**

Claims 11 to 21 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable. Reconsideration is respectfully requested.

### **II. Rejection of Claims 11 to 13 and 17 Under 35 U.S.C. § 102(b)**

Claims 11 to 13 and 17 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,787,866 (“Sugiyama”). For at least the following reasons, Applicants respectfully submit that Sugiyama does not anticipate the present claims.

Claim 11, as presented, relates to a sensor element for determining a concentration of a gas component in a gas mixture, comprising, in relevant part, a laminated body including three solid electrolyte layers, a pump cell and a Nernst cell, the three solid electrolyte layers including an upper layer, a lower layer and an intermediate layer. Sugiyama does not disclose, or even suggest, three solid electrolyte layers.

While the Office Action does refer to Sugiyama at Figure 2, referring to solid electrolyte sheets 110 and 210 as the upper and lower layers, respectively, and the ceramic sheet 36 as the intermediate layer, Sugiyama also describes ceramic sheet 35, insulating sheet 31 and insulating cover 33. Sugiyama is not limited to three, and only three, solid electrolyte layers. In order to perform the desired function, at least six layers are described in Figure 2 of Sugiyama. Claim 11, in contrast, features only three solid electrolyte layers. It is this limited construction that provides advantages of the claimed subject matter.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Sugiyama does not disclose, or even suggest, three solid electrolyte layers. As such, Sugiyama does not disclose each and every element as set forth in claim 11. Therefore, Sugiyama does not anticipate independent claim 11, or dependent claims 12, 13 and 17.

Withdrawal of the present rejection is therefore respectfully requested.

### **III. Rejection of Claims 11 to 14 and 17 to 21 Under 35 U.S.C. § 103(a)**

Claims 11 to 14 and 17 to 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over PCT Publication No. WO 01/16588 as a reference under 35 U.S.C. § 102(b) with citations from English equivalent U.S. Patent No. 6,767,442 (“Sheer”) in view of Sugiyama. For at least the following reasons, Applicants respectfully submit that the combination of Sheer and Sugiyama does not render unpatentable the presently pending claims.

As an initial matter, Applicants do not concede that Sheer is an “English equivalent” of WO 01/16588. Indeed, what is meant by the phrase “English equivalent” is clear and is not understood. Scheer et al. issued from the national stage application of PCT/DE00/02879, and WO 01/16588 is the publication of PCT/DE00/02879.

Claim 11, as indicated above, relates to a sensor element having a laminated body including three electrolyte layers including an upper layer, a lower layer and an intermediate layer. Sheer does not disclose, or even suggest, three solid electrolyte layers. The Office Action refers to solid electrolyte layers 11a, 11b and 11d of Figure 1 of Sheer as disclosing the upper, intermediate and lower layers, respectively. In addition, Sheer describes solid electrolyte layer 11c, and thus is not limited to three solid electrolyte layers.

Indeed, Sheer claims priority to the German Patent Application No. 199 41 051, which is mentioned in the Specification of the present application as having an extraneous solid electrolyte layer. Sheer features an upper, a lower and an intermediate layer of solid electrolyte material, as well as an additional solid electrolyte layer, situated between the upper and intermediate layers, which maintains the same plane as the pump cell and Nernst cell functional layers. This construction requires at least four solid electrolyte layers, as described above, and lamination layers between the upper and intermediate layers as well as the intermediate and lower layers. As described in the Specification at page 1, line 25 to page 2, line 7, the sensor element hereof may be constructed with two cast solid electrolyte layers and one laminated solid electrolyte layer, reducing the probability of gas leaks, lowering the reject rate, and minimizing costs of manufacture.

Sheer does not disclose, or even suggest, the three solid electrolyte layers of claim 11. As more fully set forth above, Sugiyama does not cure this critical deficiency of Sheer. As such, the combination of Sheer and Sugiyama does not render unpatentable independent claim 11, of dependent claims 12 to 14 and 17 to 21.

Withdrawal of the present rejection is respectfully requested.

**IV. Rejection of Claims 15 and 16 Under 35 U.S.C. § 103(b)**

Claims 15 and 16 are rejected under 35 U.S.C § 103(b) as being unpatentable over Sheer in view of Sugiyama, further in view of U.S. Patent No. 6,537,431 (“Tatsumoto”) and U.S. Patent No. 6,589,410 (“Shoji”). For at least the following reasons, the combination of Sheer, Sugiyama, Tatsumoto and Shoji does not render unpatentable the presently pending claims.

Claims 15 and 16 depend from claim 11 and therefore incorporate all of the features of claim 11. For at least the reasons set forth above, the combination of Sheer and Sugiyama does not disclose, or even suggest, all of the features of claim 11. Neither Tatsumoto nor Shoji cure the critical deficiencies of Sheer. As such, the combination of Sheer, Sugiyama, Tatsumoto and Shoji does not disclose or suggest all of the features of independent claim 11, or dependent claims 15 and 16.

Withdrawal of the present rejection is respectfully requested.

**V. Conclusion**

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,  
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